

REMARKSI. Introduction

This amendment is being submitted in response to the Office Action mailed August 15, 2000. Claims 1 and 13 have been amended. Claims 1-8, 10-21, and 23-32 remain in the application. Re-examination and re-consideration of the application, as amended, are requested.

II. Non-Art Rejections

In paragraphs 1 and 2, the Office Action rejects claims 1 and 13 under 35 U.S.C. §112, second paragraph, for having insufficient antecedent basis for the limitation, "the type" in line 2 of each claim.

The Examiner is thanked for drawing attention to the superfluous claim language and accordingly, claims 1 and 13 have been amended to delete "of the type".

III. Prior Art Rejections

In paragraphs 3 - 15, the Office Action rejects claims 1-8, 20-21, and 23-32 [sic] under 35 U.S.C. §103 as unpatentable over Van Loon et al. in view of Sheedy et al. However, in paragraph 16, the Office Action indicates that the subject matter of claims 31 and 32 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The Applicants acknowledge the Office Action's indication of allowable subject matter, but traverse the rejections of claims 1-8, 10-21, and 23-30.

The Applicants note that in paragraph 3, the Office Action includes claims 31 and 32 in the §103 rejection. However, this appears to be a clear typographical error as there is no mention of claims 31 and 32 in the detailed paragraphs that follow and these rejections would contradict paragraph 16.

IV. The Cited References and the Subject Invention

A. The Van Loon Reference

U.S. Patent No. 5,790,802, issued August 4, 1998 to Van Loon et al. discloses methods and devices to supplement messages which are to be exchanged between systems based on different protocol versions and which are provided with an information element of a second type, with an information element of a first type, and vice versa. Systems based on non-compatible protocol versions can communicate directly with any type of receiving system. Further, Van Loon et al. assert in this arrangement the drawback of needing to know, in advance, the protocol version on which the receiving system is based, does not apply. See abstract.

The method and apparatus of Van Loon et al. essentially perform a translation, requiring that a message (including an information element of a second type) is intercepted by a device 7, placed in a buffer memory 11, analyzed by a processor 10, and operated on by a selection means 14. In conjunction with memory means 13 having a table of first type information elements correlated to second type information elements, selection means 14 performs a compare and lookup operation on the information element of the second type to obtain the correlated information element of the first type. The correlation of first type to second type information elements is loosely defined as having "at least in part substantially the same information content". The translated message is then sent on to the receiving system 4. See column 6, lines 7 - 60 and FIGs 1 and 2.

B. The Sheedy Reference

U.S. Patent No. 4,912,637, issued September 28, 1999 to Sheedy et al. discloses a system for preserving, generating, and merging different versions of a common module that utilizes a line file storing the text of every line in a version and addressing each line with a unique line identifier. Any desired version may be generated directly without creating intermediate versions. The unique line identifiers facilitate a merge operation that does not duplicate lines.

The teachings of Sheedy et al. particularly address a problem which occurs in software development where alterations may be separately made to the same module (or document) thereby creating two or more divergent version paths. The system of Sheedy et al. uses two basic files, a line file and a variant history file to facilitate version management. Within these files,

change tags are used to track the various differences (embodied in different lines) between different versions.

C. The Subject Invention

The Applicants' invention discloses a forward and backward compatible streaming protocol requiring subsequent versions of the protocol to be purely additive relative to earlier versions. When a data segment is transmitted as a data stream, a first stream of data that is in accordance with a first version of the protocol is transmitted, with additional streams of data that are in accordance with subsequent versions of the protocol appended in sequence to the first stream of data. When a read module implements an earlier version of the protocol than a write module, the data segment is truncated to include only the data supported by the version implemented by the read module. On the other hand, when the read module implements a later version of the protocol than the write module, receipt of the data segment is terminated after the data supported by the version implemented by the write module is received.

D. The Independent Claims Are Patentable Over The Cited References

Regarding independent claims 1, 13, 19, 24, 28 - 30, the Office Action asserts that Van Loon et al. disclose a method comprising all the limitations of claim 1 with the exception of "delimiting the data segment in the data stream begin and end tags". However, the Office Action asserts that Sheedy et al. teach the remaining limitation and that it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the control tags as taught by Sheedy et al. into the system of Van Loon et al.

The teachings of Van Loon et al. do not include the subject of the present invention and in fact are fundamentally different. Particularly, the table lookup and translation between first type and second type information elements distinguishes the teachings of Van Loon et al. from the present invention. To facilitate communication, the system and method of Van Loon et al. require an intervening element between the sending system 1 and the receiving system 4, i.e. the device 7 (or 38) that performs the translation.

In addition, although the system and method of Van Loon et al. is described in the abstract as eliminating the "drawback of needing to know, in advance, the protocol version on

which the receiving system is based", this can only mean that the sending system 1 and the receiving system 1 do not require awareness of the protocol of the other. Obviously, the translation device 7 must know both protocols and particularly, the first type/second type table of memory means 13 must be generated with knowledge of both protocols such that the relationship of "substantially the same information content" embodied in the table can be achieved.

Finally, the system and method of Van Loon et al. is presented demonstrating communication between only two different protocols, which have been analogized to two different protocol versions in the present invention. Although Van Loon et al. do not appear to limit their teaching to two-protocol applications, they do not discuss accommodating larger numbers of protocols in any detail. Accommodating additional protocols with the teachings of Van Loon et al. would seem to require appending the translation table or creating additional tables and/or separate translation devices. Implementation of the teachings of Van Loon et al. across any significant number of protocols (or protocol versions) would likely become very cumbersome.

In contrast, the present invention employs versions of protocols that comprise additive qualities and elements in later generations. Such a system, in part, facilitates communication between modules such that one module need not know a priori the protocol version of the other module. In addition, such a system does not require an intervening translator device which must be developed understanding the communicated protocols as with Van Loon et al. Furthermore, the present invention is taught as readily accommodating any reasonable number of protocol versions. See FIG. 2 and page 9, lines 8 -16 of the application for support. As such Van Loon et al. simply do not teach sequential additional streams of data to the first stream of data according to each subsequent version of the streaming protocol up to and including the selected version.

Furthermore, the Applicants also submit that the additional teachings of Sheedy et al. do not supply the element of delimiting the data segment in the data stream using begin and end tags as claimed in claims 1, 19 and 29. The teachings of Sheedy et al. disclose a system for preserving, generating, and merging different versions of a common module that utilizes a line file storing the text of every line in a version and addressing each line with a unique line identifier. The change tags of Sheedy et al. are generated when a new version of a module is

created (either by modifying a module or by merging two modules). See column 3, lines 14 - 29 and column 14, lines 33 - 67. The change tags can then used to recreate a desired version.

In contrast, the present invention teaches begin and end tags that are used to delimit the data segment in the data stream. The begin and end tags are generated and used in the sending and receiving of information between modules. Thus, the tags of Sheedy et al. are entirely different from those of the present invention.

In addition, Van Loon et al. view protocol heritage in which newer versions are based on older versions such that the procedures of the first (lower) protocol version are incorporated in the second (higher) protocol version as being limited. The "drawbacks" as taught by Van Loon et al. include limited design freedom in the development of subsequent protocol versions and a requirement that a "message to be despatched [sic] from a system based on said [higher] to a system based on a lower protocol version should be based on the lower protocol version to make communications between the two systems possible". See column 1, lines 17 - 45. The inference from Van Loon et al. is that it would be impossible for a higher protocol message to be received and understood by a module operating in the lower protocol. However, the present invention sequentially appends additional streams of data to the first stream of data according to each subsequent version of the streaming protocol up to and including the selected version to make, in part such communication possible. The Applicants respectfully submit that the teachings of Van Loon et al. teach away from the present invention.

In view of the foregoing, the Applicants respectfully submit that the independent claims are allowable over the references.

V. Dependent Claims 2-8, 10-12, 14 - 18, 20 -21 and 23, 25 - 27

Dependent Claims 2-8, 10-12, 14 - 18, 20 -21 and 23, 25 - 27 incorporate the limitations of their related independent claims, and are therefore patentable on this basis. In addition, these claims recite novel elements even more remote from the cited references. The Applicants respectfully request withdrawal of the present §103 rejection of these claims.

VI. Conclusion

In view of the above, it is submitted that this application is now in good order for allowance and such allowance is respectively solicited. Should the Examiner believe minor matters still remain that can be resolved in a telephone interview, the Examiner is urged to call Applicants' undersigned attorney.

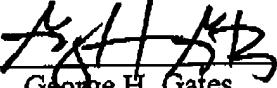
Respectfully submitted,

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